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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

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NGUYEN, NGOC YEN M	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 26

Application Number: 09/197,499
Filing Date: November 23, 1998
Appellant(s): SHIMAZU ET AL.

Raymond C. Stewart
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed November 8, 2002.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is substantially correct.

This appeal involves claims 1, 18, 20.

Claims 11-17 are withdrawn from consideration as not directed to the elected invention.

Claims 2-10, 19, 21 have been canceled. Claims 5, 8, 19 were canceled in the after final amendment filed July 12, 2002 (paper #21).

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is substantially correct.

There are two other after-final amendments, which were filed on June 18 and October 25, 2002 (paper #19 and #23). As indicated in the advisory actions (paper #20 and #24), these two amendments will not be entered upon Appellants filing of a Notice of Appeal and an Appeal Brief.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

Support for the embodiments [A] and [C] can be found in claims 1 and 20, also in Example 1.

Support for the embodiment [B] can be found in claim 18 and page 4, first full paragraph.

(6) Issues

The appellant's statement of the issues in the brief is correct.

To simplify the issues, the rejection of claims 1, 18, 20 over Diffenbach et al in view of Lepper et al is withdrawn (Issue 1).

Also, the rejection over Schuetz in view of Raney, Richter and Lepper et al is also withdrawn (Issue 5). It should be noted that in the final rejection, Richter and Lepper are optionally applied, and Issue 4, when the rejection is over only Schuetz and Raney without Richter and Lepper, is maintained.

Only Issues 2-4 are remained.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 1, 18 and 20 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,536,694	Schuetz et al	06-1996
1,628,190	Raney	05-1927

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 20 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Schuetz '694.

Schuetz '694 discloses that activated metal catalysts are known as Raney catalysts in the chemical engineering field. They are used mainly in the powdered form in a large number of reactions for hydrogenating organic compounds. These powdered catalysts are prepared from an alloy of a catalytically active metal and another alloying component which is leachable in alkalis. The Raney process metals used are mainly Ni, Co, Cu or Fe. The alloying component which is mainly used is Al (note column 1, lines 30-41). This so-called Raney alloy is first finely milled according to Raney's method. Then the aluminum is completely or partially removed by leaching with alkalis such as, for example, caustic soda solution (note column 1, lines 42-50).

The powder Raney catalyst as disclosed in Schuetz '694 anticipates the claimed product.

Alternatively, any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see In re Brown, 173 U.S.P.Q 685, and In re Fessmann, 180 U.S.P.Q. 324.

Claims 1, 18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuetz et al (5,536,694) in view of Raney (1,628,190).

Schuetz '694 discloses that activated metal catalysts are known as Raney catalysts in the chemical engineering field, they are used mainly in the powdered form in a large number of reactions for hydrogenating organic compounds. These powdered catalysts are prepared from an alloy of a catalytically active metal and another alloying component, which is leachable in alkali. The catalytically active metals used are mainly Ni, Co, Cu or Fe. The alloying component, which is mainly used, is aluminum (note column 1, lines 30-41). Schuetz '694 further teaches that powder catalysts have the disadvantages that they can only be used in batch processes and have to be isolated after the catalytic reaction by time-consuming filtration of the reaction media. Various processes for preparing molded items have therefore been disclosed which lead

to activated metal fixed bed catalysts after extraction of the aluminum. Thus, for example, coarse particulate, i.e. only coarsely milled, Raney alloys are available which can be activated by treatment with caustic soda solution (note column 1, lines 51-60).

Thus, Schuetz '694 fairly teaches that both the powder form and the coarse particulate form of Raney catalyst are known in the art. They can be formed by finely or coarsely milled Raney alloys. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to further pulverize the coarse particles to obtain finer particles when powder catalyst is desired. It should be noted that in Schuetz '694, both powder catalyst or coarse catalyst can be used.

For claims 1 and 20, "up to 15%" of Mo and/or Sn includes zero.

For claims 18, Schuetz does not disclose that the Raney catalyst mentioned in the prior art section contains Mo and/or Sn.

However, Schuetz' 694 discloses that it is known in the art to include promoters, such as chromium, iron, cobalt, tantalum, titanium and/or molybdenum and also metals from the platinum group, up to 15%, in the Raney catalysts to influence their catalytic properties (note paragraph bridging columns 5-6).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to further include a promoter, such as molybdenum, to the Raney catalyst as mentioned in the prior art section of Schuetz '694 because

such promoter can influence the catalytic properties of the catalyst as suggested by Schuetz '694 (note paragraph bridging columns 5-6).

Raney '190 is applied as stated below to teach that powder Raney catalyst, such as the one disclosed in Schuetz, is produced by a known and conventional method.

Raney '190 discloses a method of producing metallic nickel in a catalytic state such as may be used in the hydrogenation of oils, fats, waxes and the like (note page 1, lines 5-7). The process comprises the steps of alloying metallic nickel with metals such as silicon and aluminum in various proportions, and then dissolving the aluminum and silicon from the alloy by means of a solvent, which will not attack the nickel, whereupon the nickel remains in a finely divided state (note page 1, lines 8-13). The alloying is carried out by melting the nickel, aluminum and silicon either separately, or together, cooling the melt and pulverizing the solidified alloy (note page 1, lines 32-34). Raney '190 further discloses that the nickel aluminum alloy may be either very finely pulverized or it may be broken in pieces the size of peas or smaller. In either condition, the alloy may be treated with caustic soda or the aluminum removed with the use of some other solvent. In case the larger pieces are used, the nickel is left in a more or less spongy and porous state, somewhat similar to a cinder, and for certain classes of work is necessary and desirable to have the catalyzer in this condition (note page 1, lines 81-92). Raney '190 further discloses that the alloy can have 10-85% nickel and 90-15% aluminum (note page 1, lines 74-77). This range would create a Ni:Al weight ratio that overlaps the claimed range. The subject

matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, see In re Malagari, 182 U.S.P.Q. 549.

(11) Response to Argument

- Rejection [1]

This rejection is withdrawn in order to simplify the issues.

- Rejections [2] and [3]

Appellants argue that in Schuetz, column 1, lines 55-63, it is disclosed that Raney alloys are available as a "coarse particulate" and the activation of the particulate takes place only in a "shallow surface layer..."

Granted that Schuetz '694 does disclose that Raney alloys are available as a "coarse particulate" as argued by Appellants above, however, Schuetz '694 also discloses that Raney alloy in powder is also known, Raney catalysts "are used mainly in the powdered form in a large number of reactions for hydrogenating organic compounds" (note column 1, lines 30-33 and lines 42-50).

Appellants argued that Schuetz fail to teach or suggest the inventive step (vii) of crushing the Raney catalyst used in the

hydrogenation reaction into powder to thereby renew activation of the deeper-lying alloyed layers.

As stated in the above rejection, the claimed product-by-process is rejected under 102/103. For the 102 part of the rejection, Appellants' claims are drawn to a powdered Raney catalyst (not a process for making such product), and such powdered Raney catalyst is fairly taught by Schuetz '694. Thus, the powdered Raney catalyst as disclosed in Schuetz anticipates the claimed product. For the 103 part of the rejection, any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see In re Brown, 173 U.S.P.Q 685, and In re Fessmann, 180 U.S.P.Q. 324. Appellants have not provided any evidence to show that the claimed catalyst is different than the powdered Raney catalyst as disclosed in Schuetz.

- Rejections [4] and [5]

The rejection [5] is withdrawn to simplify issue.

For rejection 4, Appellants argue that there is no teaching or suggestion in Schuetz et al to grind the coarse particles into powder form to

access the deeper-lying alloyed layers for reactivation as asserted by the Examiner.

Even if Schuetz does not teach grinding the coarse particles into powder form as argued by Appellants, Schuetz still fairly teaches that powdered form Raney catalyst is known and conventional in the art. Again, Appellants have not pointed out any difference between the powdered Raney catalyst as disclosed in Schuetz and the claimed product.

Appellants argue that the claimed invention relates to a lump form Raney catalyst capable of being re-utilized to a powder catalyst and a powder Raney catalyst prepared from a used lump form Raney catalyst.

Again, Appellants' claims are drawn to a powder catalyst, not to a process of making such catalyst. Granted that the process of making the claimed catalyst is different than that of the powder catalyst disclosed in Schuetz, however, Appellants have not provided any evidence to show that the claimed product is indeed different than the powder catalyst of Schuetz. In both the process for making the claimed product and the process of making powder Raney catalyst, the lumps are ground to form powders and the powders are treated with caustic soda to remove the aluminum from the powders. Whether the lumps are the used lumps, as in the process of the claimed invention, or "fresh" lumps, as in the process of making powder Raney catalyst, the lumps are still being crushed and activated in the same manner and to the same extent, thus the formed powder catalysts from the two processes would be the same.

Appellants argue that Raney fails to cure the deficiencies of the prior art section of Schuetz et al since Raney fails to teach or suggest that the used coarse particulate catalyst is capable of being crushed to expose inactive potential catalyst material which can then be activated for use in hydrogenating organic compounds.

Raney '190 is applied to teach that powder Raney catalyst is conventional produced by forming a melt of nickel aluminum alloy, cooling (i.e. quenching) the alloy to form lumps, pulverizing the lumps to form powders and treating the powders with caustic soda to dissolve the aluminum. Raney '190 is not relied upon to teach the step of reuse the "spent" catalyst. However, .Appellants have not provided any evidence to show that the powder catalyst which is produced from the already used catalyst as raw material is different from the powder catalyst which is produced by the process of Raney '190, see In re Brown, 173 U.S.P.Q 685, and In re Fessmann, 180 U.S.P.Q. 324

The rejection involving Richter and Lepper (i.e., Issue 5) is withdrawn to simplify the issues. It should be noted that these references were optionally applied in the final rejection.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Ngoc-Yen M. Nguyen
Primary Examiner
Art Unit 1754

nmn
January 27, 2003

Conferees
Stanley Silverman
Patrick Ryan

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747